Remarks/Arguments

Claims 1-13 are presently presented for consideration, claims 14-25 having been withdrawn as being directed to a non-elected invention.

Further examination and reconsideration is requested.

Objection to Disclosure

The Examiner objected to the specification because on page 11, Applicants list information about a co-pending application based on attorney docketing information.

By the present amendment, Applicants have replaced such information with an appropriate U.S. application number and a U.S. publication number.

It is respectfully submitted that the objection is now overcome.

Rejection of Claims

The Examiner rejected claims 1-4, 8, 9, 11 and 12 under 35 U.S.C. 103(a) as being unpatentable over Hofmann (USP 4,911,806) in view of Dahms (USP 4,124,470).

With regard to the above rejection, the Examiner appears to concede that Hofmann does not disclose a configuration wherein a sample holder and two coextensive, elongated, electrically-conductive members in fixed, spaced relation are adapted for relative movement between a first position wherein at least a portion of the members is disposed within the holder and a second position wherein the members are disposed outside of the holder. The Examiner asserts, however, that configuring a manipulation device such that it could be utilized for a plurality of different containers (i.e., that it can be pulled in and out of a particular analyte container) is notoriously well known in the art. The Examiner cites Dahms as showing a "manipulation device" that is movable into and out of a vessel.

Claims 5-7 and 10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmann and Dahms as applied to claim 4, and further in view of Goldstein (USP 4,643,814).

Claim 13 was rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmann in view of Dahms as applied to claim 4, and further in view of WO 97/41219.

Legal Standard

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of

success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). MPEP 2143.

While the tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art. MPEP 2142.

A Sec.103 rejection based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the *reference,* is not proper and the prima facie case of obviousness cannot be properly made. In short, there would be *no technological motivation* for engaging in the modification or change. To the contrary, there would be a disincentive. *In re Gordon,* 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Applicant's Argument

With regard to independent claims 1 and 4, it is respectfully submitted that the Examiner has failed to establish a *prima facie* case of obviousness.

Applicants traverse the Examiner's "well-known" statement. MPEP 2144.03. The Examiner has not shown *in the prior art* the motivation to modify structure like, or analogous to, that claimed by Applicants in a fashion to render the structure movable with respect to a sample holder, between a first position wherein at least a portion of the structure is disposed within the holder and a second position wherein the structure is disposed outside of the holder.

The Examiner's assertion that "configuring a manipulation device such that it could be utilized for a plurality of different containers (i.e., that it can be pulled in and out of a particular analyte container) is notoriously well known in the art" is not instructive on the issue of obviousness in the present case since "manipulation devices," as a class, are extraordinarily diverse -- a configuration that might make sense and work with one "manipulation device" could be inapplicable, and even inoperable, with another, different "manipulation device."

The Examiner's "well-known" statement is made at such a high level (i.e., "manipulation devices") as to be meaningless. While it may be true that certain known "manipulation devices" have been configured for insertion into and removal from a container, many other "manipulation devices" have not. The Examiner's citation of Dahms in support of the "well-known" statement underscores its deficiency. While the Dahms patent might show the desirability of configuring a "sampler tube" (as described therein, a tube that can pick up a small amount of sample from a sample reservoir and then deposit that

sample portion in an electrophoretic tube along with a quantity of electrophoretic medium) for insertion into and removal from a holder, it should be noted that the structure of Hoffman that the Examiner would modify is not a sampler tube, nor is it analogous or equivalent thereto - but rather it is electrodes supported in a container. It is ironic that the structure in Dahms that is closest in structure and function to Applicant's electrically-conductive members -- namely conductors 35 and 40 -- are not taught as being configured for insertion into and removal from a container at all. Yet conductors 35 and 40 are clearly "manipulation devices" as they provide the motive force to move sample constituents.

Whether other manipulation devices (i.e., devices that are not the claimed device) have been configured in other combinations for movement in and out of a vessel does not render Applicant's claimed combination obvious. Applicants claim at least two coextensive, elongated, electrically-conductive members disposed in fixed, spaced relation, with said members being adapted for relative movement with respect to a sample holder, between a first position wherein at least a portion of the members is disposed within the holder and a second position wherein the members are disposed outside of the holder. Differently structured devices that operate in a different fashion, such as the sampler tubes (44) shown in Dahms, would not lead the skilled artisan to Applicant's claimed combination. Here, there would be no motivation to modify Hofmann so as to make Applicant's claimed combination, since there is no suggestion in Dahms to do so. As indicated above, the sampler tubes of Dahms pick up a small amount of sample from a sample reservoir and then deposit that sample portion in an electrophoretic tube along with a quantity of electrophoretic medium. The electrodes (14 and 16) of Hofmann, on the other hand, are not suited to pick up and place sample portions. Hofmann's electrodes are supported in a container, into which a sample can be placed. A coil (20) surrounds the region between the electrodes. First and second electric signals can be applied to the electrodes and the coil, respectively, to thereby generate substantially orthogonal oscillating electric and magnetic fields that are at the same frequency but approximately ninety degrees out of phase. By selecting the frequency, particles having different polarization relaxation frequencies and sizes will migrate at different velocities and thereby sort into various fractions. If one were to lift the members out of the vessel, the sample would remain in the vessel and the separation would be lost. That is, the sample would not come out with the electrodes, given the large gap (0.5 cm) between them. Moreover, if the electrodes were removed away from the coil, the intended functionality of Dahms would be destroyed. In short, one would not expect to achieve any useful result to modify Hofmann in the manner asserted by the Examiner. Moreover, it is not plausible that one skilled in the art would look to sampler tubes, such as tubes 44 shown by Dahms, as motivation for changing the configuration of electrodes mounted in a vessel shown in Hofmann. The structures, functions, and operational modes are simply too diverse.

The Examiner cites col. 9, lines 17-20 of Dahms as structure that is movable into and out of a vessel. That structure is a detector, and does not serve to manipulate sample at all. In fact, Dahms describes that care is taken to not disturb the sample during use of the

detector (see Abstract). Clearly, one of skill in the art would not be motivated to change Hofmann in the manner asserted by the Examiner upon seeing a movable detector that is used in a fashion where care is taken not to disturb sample.

Applicants note that the use of the turntable of Dahms, by itself, would not work to provide the claimed relative movement. Rather, the electrodes would simply crash into the sidewalls of the container as the turntable moved round.

It is noted that the Examiner stated in articulating the rejections of claims 1 and 4, that certain limitations of the "wherein" clause of each claim was deemed to be the intended use of the apparatus and, so, were not considered in determining patentability.

With regard to claims 1 and 4, Applicants point out that the final "wherein" clause does not recite merely the use or function of establishing an electrical field gradient, but rather defines a structural interrelationship of recited elements. The claim language at issue imposes a physical interrelationship of elements that supports a specific function in operation. Clearly, an AC power source and electrically-conductive members can be configured and disposed with respect to one another in countless ways, but only a subset of those ways support establishment of an electrical field gradient.

Moreover, with particular regard to claim 4, the final "wherein" clause does not recite merely the use or function of trapping, but rather defines a structural interrelationship of recited elements; namely, an AC power source and electrically-conductive members in combination operable to establish an electrical field gradient between end regions of the members effective to trap at least a portion of a polarizable analyte in a concentration zone between the end regions. In other words, the claim language at issue imposes a physical interrelationship of elements that supports specific analyte-manipulation functions. Clearly, an AC power source and electrically-conductive members can be configured and disposed with respect to one another in countless ways, but only a subset of those ways support establishment of an analyte-trapping electric field.

Hofmann would appear to lack structure configured to establish an electrical field gradient (claims 1 and 4), and particularly a gradient effective to trap analyte (claim 4). Nowhere does Hofmann state that the described apparatus produces an electrical field gradient. Moreover, Hofmann stresses that "the coil [for generating a magnetic field] **must** surround the region between the electrodes 14 and 16" (col. 5, lines 2-3; emphasis added). Applicants note that if a sufficient electrical field gradient were established, such a magnetic field would not be required for migration.

Further, Applicants note that the electrodes of Hofmann are described as "a pair of stainless steel bars" having an "electrode area [of] approximately six and one-half square centimeters". See col. 5, lines 24-30. From Applicants reading of Hofmann, the electrode structures of Hofmann appear to be in the nature of confronting flat surfaces. One would expect an electrical field generated by such structure to be more or less uniform.

In view of the above, it is respectfully submitted that independent claims 1 and 4 are allowable. The dependent claims are patentable at least for the reasons stated above with regard to the claims from which they depend.

It is requested that the rejections and objection be withdrawn, and that the claims be allowed.

Respectfully submitted,

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